



## *X-Plain*

### *Uterine Fibroids*

## Reference Summary

### Introduction

Fibroids are common, benign tumors of the uterus. They can cause significant pain, as well as abnormal bleeding. About 30% of all women may have fibroids. Most of them do not have any symptoms.

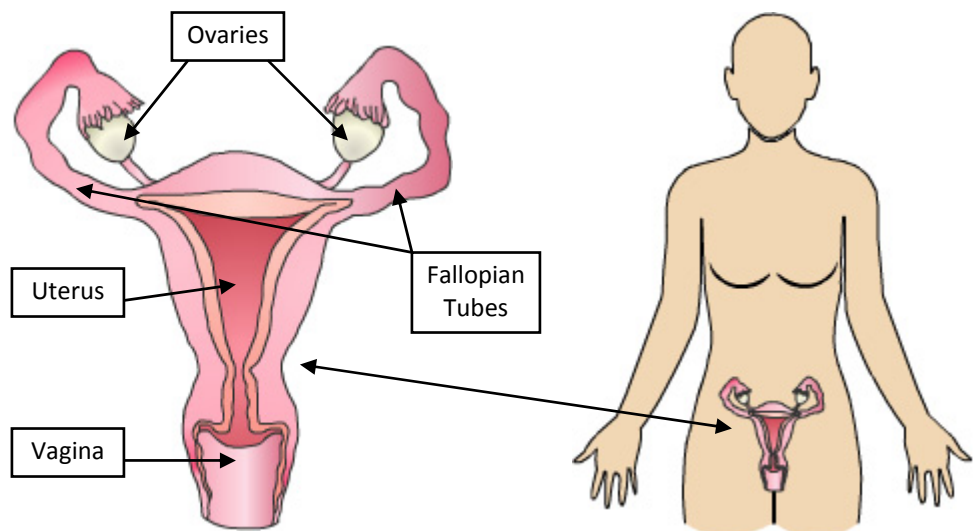
This reference summary explains uterine fibroids and their causes, symptoms, diagnosis, and treatment options.

### Anatomy

The female reproductive organs include:

- the vagina
- the uterus
- the fallopian tubes
- the ovaries

The female reproductive organs are located in the pelvis, between the urinary bladder and the rectum.



The ovaries have two main functions.

1. The production of specialized hormones, such as estrogen and progesterone.
2. Ovulation, which is the release of eggs that are needed for reproduction.

The hormones produced by the ovaries are very important in keeping ovulation regular. These hormones also prepare the inner lining of the uterus to proceed with a pregnancy.

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When an egg is released, it goes down to the uterus through the fallopian tube, where it may be fertilized. If the egg is not fertilized, the egg and the inner lining of the uterus are discharged to the outside of the body during the menstrual period.

The uterus is pear shaped. It is about three inches long and has three layers. The inner layer of the uterus is called the *endometrium*.

As menopause approaches, periods become irregular and eventually stop. Menopause occurs when the ovaries quit making hormones and releasing eggs.

When a woman gets pregnant, the fetus stays in the uterus until it is born. The uterus is able to expand greatly in size. The middle, muscular layer of the uterus creates labor contractions, which cause the baby to come out.

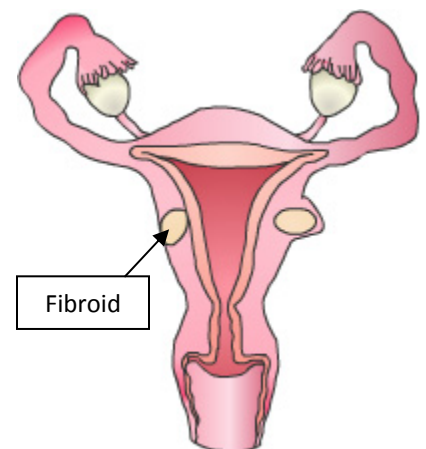
The lowest part of the uterus is called the *cervix*, which opens into the vagina. The vagina opens to the outside of the body between the urethra, which is the urinary bladder opening, and the rectum. The urinary bladder is located in front of the vagina and uterus. The kidneys drain urine into the bladder through two tubes called *ureters*. The intestines and the rectum are located above and behind the vagina and uterus.

## Fibroids

Uterine fibroids are benign tumors in the middle layer of the uterus, the muscular layer that causes contractions during labor.

A tumor is an abnormal growth of cells and tissue. Benign tumors are non-cancerous and do not spread. Cancers are called *malignant* tumors because they do spread to other parts of the body.

Uterine fibroids are made of nodules of smooth muscle cells and fibrous tissue that develop in the wall of the uterus. Fibroids may grow as a single nodule or in clusters. They may range in size from 1/10 of an inch to 8 inches in diameter. Uterine fibroids may grow in the wall of the uterus, or they may project into the interior cavity or toward the outer surface of the uterus.



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## Symptoms

Most fibroids do not cause any symptoms and may be discovered during a routine examination.

Some women who have uterine fibroids may experience symptoms such as

- excessive or painful bleeding during menstruation
- bleeding between periods
- a feeling of fullness in the lower abdomen

Other symptoms of uterine fibroids include:

- frequent urination resulting from a fibroid that presses on the bladder
- pain during sexual intercourse
- low back pain

## Complications

In rare cases, a fibroid may press on and block the fallopian tube, preventing fertilization and migration of the egg, which can result in infertility. After surgical removal of the fibroid, fertility is usually restored.



## Causes

The factors that cause fibroids to grow in the uterus are not known.

Almost all fibroids occur in women of reproductive age or old enough to have periods. About 25% of women of reproductive age have fibroids.

African American women are more likely than Caucasian women to have fibroids. They also tend to have them at an earlier age.

Athletic women seem to have a lower prevalence of uterine fibroids than women who do not engage in any athletic activities. Similarly, overweight women are more likely to have fibroids.

Women who have given birth appear to be at a lower risk for fibroids.

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## Diagnosis

Family doctors and gynecologists can diagnose fibroids fairly easily after obtaining a detailed medical history and performing a pelvic exam. Fibroids are the most frequently diagnosed tumor of the female pelvis.

Ultrasounds of the pelvis may be needed in order to see the fibroids better.

MRIs and CAT scans may also be done.



## Treatment

Most fibroids do not cause any symptoms and do not require treatment other than regular observation by a doctor.

For women who experience occasional pelvic pain or discomfort, a mild, over-the-counter anti-inflammatory or painkilling drug is effective. Cases that are more bothersome may require stronger, prescription drugs.

If a fibroid is very painful or affects fertility, a surgeon can remove the tumor, leaving the uterus intact. This procedure, called *leiomyomectomy*, may weaken the wall of the uterus. Deliveries that occur after a leiomyomectomy usually must be by caesarean section.

At times, the surgeon may decide that taking the whole uterus out along with the fibroids may be the best treatment. Such an operation is called a hysterectomy. After a hysterectomy, a woman is no longer able to have children. A woman considering hysterectomy should discuss the pros and cons thoroughly with her doctor.

In patients who do not respond to painkillers and who are not candidates for surgery, hormone therapy may be used. Hormone therapy medications reduce estrogen levels and seem to be effective in shrinking the uterus and the fibroids.

New treatment options have been developed to deal with fibroids. These include the following:

- Myolysis
- Uterine Fibroid Embolization or UFE
- Focused Ultrasound Ablation

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### *Myolysis*

Myolysis is a procedure in which an electrical needle is inserted into the uterus through a small incision in the abdomen to destroy the blood vessels feeding the fibroids.

### *Uterine Fibroid Embolization (UFE)*

Uterine fibroid embolization (UFE) is a treatment that cuts off the blood supply to the uterus and the fibroids so they shrink. UFE is proving to be an alternative to hysterectomy and leiomyomectomy.

The recovery time is also shorter, and there is a much lower risk of needing a blood transfusion than for other surgeries. Many women can have UFE and go home the same day.

There is a small risk of infection in the treated fibroid, but these are usually managed with antibiotics. Recent studies also suggest that most fibroid tumors are not likely to re-grow after UFE, although more long-term data is needed.

Not all fibroids can be treated with UFE. All patients must first be evaluated with an ultrasound or a MRI to make sure the fibroids will respond well to this treatment. Doctors called interventional radiologists perform UFE.

The best candidates for UFE are women who:

- Have fibroid tumors that are causing heavy bleeding
- Have fibroid tumors that are causing pain or pressing on the bladder or rectum
- Don't want to have a hysterectomy
- Don't want to have more children

Sometimes after UFE, the particles that are put into the fibroids to cut off their blood supply travel to the ovaries. In a few women, the ovaries then stop working for a short time or permanently.

Although researchers know that UFE may affect how ovaries function, they are unsure of how exactly UFE affects fertility. If you want to have children in the future, you should talk with your doctors about the small, but definite risk of UFE causing you to go into early menopause.

Too few women have gotten pregnant after UFE for researchers to know if there is an increased risk of pregnancy complications.

### *Focused Ultrasound Ablation or FUA*

Focused Ultrasound Ablation uses focused ultrasounds that are guided by magnetic resonance images to target and destroy uterine fibroids.

The procedure is intended to treat women who have completed child bearing or do not intend to become pregnant. FUA is a non-invasive surgery. It is an alternative to leiomyomectomy, hysterectomy, watchful waiting, hormone therapy, or uterine fibroid embolization.

FUA uses a device that combines two systems – a magnetic resonance imaging (MRI) machine to visualize patient anatomy, map the volume of fibroid tissue to be treated, and monitor the temperature of the uterine tissue after heating, and a focused ultrasound beam that heats and destroys the fibroid tissue using high frequency, high-energy sound waves.

The treatment requires repeated targeting and heating of fibroid tissue while the patient lies inside the MRI machine. The procedure can last as long as three hours.

This procedure can be used to treat some – but not all – fibroids. Fibroids close to sensitive organs such as the bowel or bladder and those outside the image area cannot be treated with FUA.

### **Summary**

Uterine fibroids are very common, benign tumors of the uterus. Most women who have uterine fibroids do not have any symptoms and do not need treatment.

For women who need treatment, simple painkillers may be enough. Non surgical and surgical treatment options have been very successful in reducing the size of fibroids or removing them along with the uterus if needed.



Thanks to medical advances, patients with uterine fibroids can live a very healthy and normal life!

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